NEWSLINE

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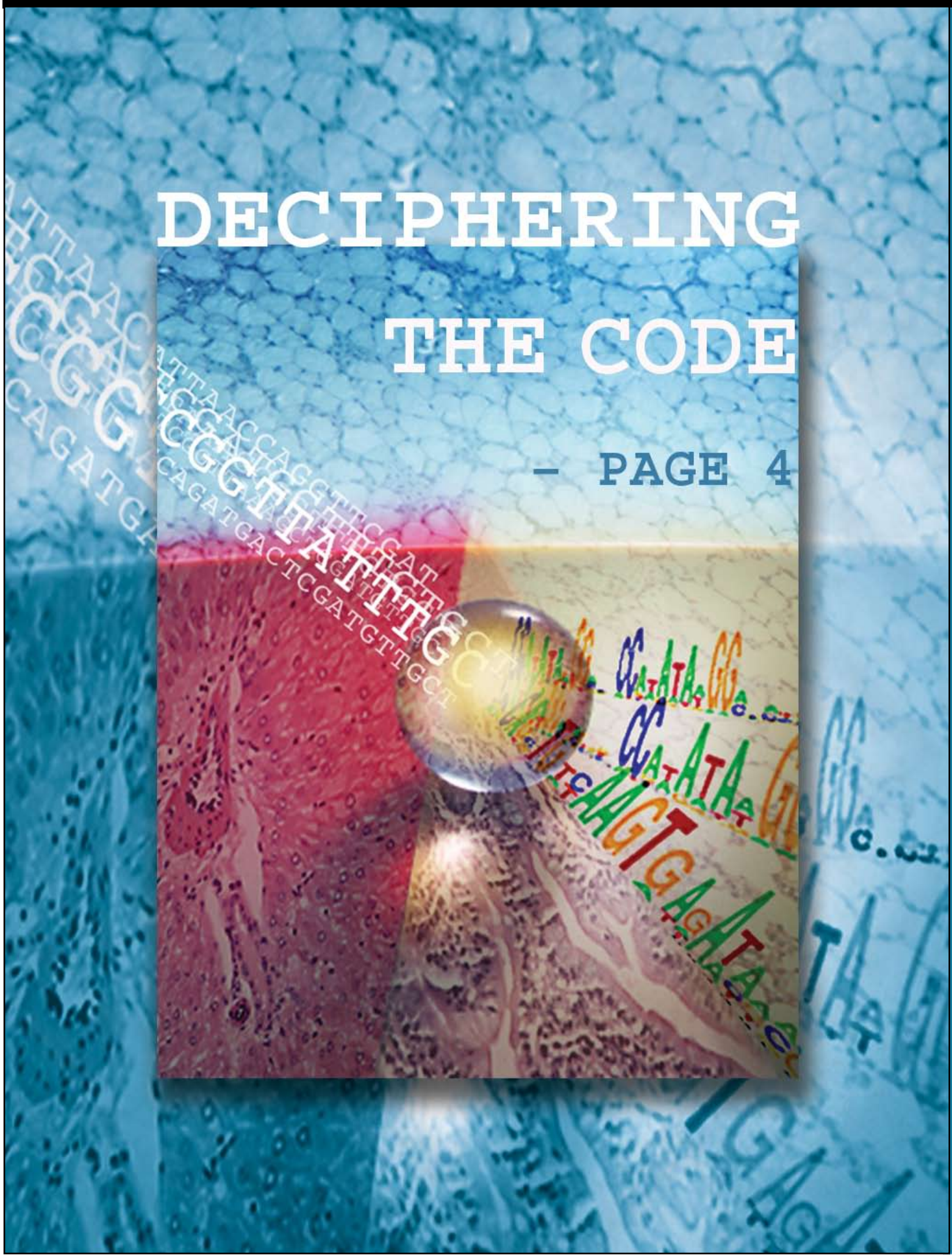

What's INSIDE

LAB NEWS

Veterans of contract change look beyond 'transition'

By Anne M. Stark
Newsline staff writer

A group of national laboratory managers sat down with employees last week to present "Life After Transition," a discussion of mission, workforce and operational changes that took place after their laboratories experienced a change in management.

Bob Kuckuck, former Los Alamos director and a former LLNL deputy director, moderated the discussion. Panelists included Lanny Bates, facilities development division leader at Oak Ridge National Laboratory; Scott Gibbs associate director for Engineering and Engineering Sciences at Los Alamos; Carolyn Zerkle, deputy associate director for Nuclear and High Hazard Operations at Los Alamos; Pat Falcone, systems analysis leader at Sandia; and Bill Hempfling, human resources director at Brookhaven.

Kuckuck cautioned the transition goes beyond "the day the new contractor is announced and the day the new contract is in place. It's revolution followed by evolution. You're going to be expecting answers and you won't get them right away."

Panelists emphasized the transition process should focus on employees. "The new contractor focused on the people because they realized the people are the ones who make the lab work," Gibbs said.

However, LANL panelists did say there were changes, particularly in the Laboratory Directed Research and Development program with a larger emphasis on patents and licensing once the new contractor took over.

Falcone said the same thing happened when Lockheed Martin took over management at Sandia.

"Tech transfer became very important," she said. Lockheed started a venture capital fund specifically for technology transfer. Falcone said Sandia has garnered $7 million in revenue from patents and licensing since the beginning of the year.

Most panelists said there was very little change in the workforce following transition to a new laboratory contactor. At Los Alamos, every UC employee was offered a job and though about 150 people of 9,000 employees changed positions, they still remained a part of the workforce, Zerkle said.

At Oak Ridge, Bates said the new management initially stressed cutting indirect costs and there was a hiring freeze. But since that time, he said they've created headroom for growth and continue hiring.

At LANL, the management fee went from $16 million with UC to $79 million with Los Alamos National Security, LLC (LANS); Zerkle said that, combined with a New Mexico gross receipts tax, left LANL with a $150 million shortfall. She said working with a corporation helped the lab improve efficiencies and reduce G&A.

Gibbs said LANL made up half of that shortfall by setting different targets for overhead functions. He also said the new management brought in creative ways to save money, for example, using internet auctions for some procurements as opposed to the conventional methods of purchasing products.

"We're getting the same goods and services for less money," he said. "We're doing the same job and it's costing us less."

As for hiring freezes, Gibbs and Zerkle said there was an initial slowdown in new hires right after the new contract took effect at LANL (July 2006), but hiring has since increased. From June 1-Oct. 1, 2006, Zerkle hired 30 employees in her department; from Oct. 1-Dec. 1, she has hired 18 new employees.

Hempfling said Livermore is in a good position for the transition because the Laboratory knows that it's coming. He said Brookhaven employees were told in May 1995 that they would have a new manager, by October the new manager was selected and by March the new manager was in place. "Our employees were really, really angry, they were frustrated, they were worried about their future, their jobs and whether there would be layoffs," he said. "But the transition was virtually transparent."

"When the new contractor comes in, they don't want to upset the apple cart."

The complete panel discussion is posted on the Contract Transition Website at http://transition.llnl.gov/home/?url=news-video&id=38

JACQUELINE MCBRIDE/NEWSLINE

Above: From left, LLNL Transition Manager Barbara Peterson; Bill Hempfling, Brookhaven human resources director; Pat Falcone, Sandia systems analysis leader; Scott Gibbs, Los Alamos associate director for Engineering; Carolyn Zerkle, Los Alamos deputy associate director for Nuclear and High Hazard Operations; and Lanny Bates, Oak Ridge facilities development division leader, participated in "Life After Transition," a discussion on changes that took place after their laboratories experienced a change in management. Left: Forum attendees meet panelists after the discussion.

SCIENCE NEWS

Call for LDRD Exploratory Research proposals

The invitation to submit proposals for the FY08 Laboratory Directed Research and Development Exploratory Research (ER) category has been issued. The ER is one of the four categories comprising the LDRD Program and emphasizes innovative R&D activities in support of the directorates' or institutes' strategic direction and long-term vision, and the Laboratory Science and Technology Long-Range Plan.

The ER competition is open to all Laboratory programmatic, scientific, engineering and technical staff. The deadline for submitting ER portfolios to the Laboratory Science & Technology Office (LSTO) is close of business, Friday, March 23.

Proposals in this competition are first submitted to and prioritized by each directorate's management. Because of the large number of proposals submitted in the ER category, written proposals must be concise and of the highest quality. Note that proposals are restricted to six pages maximum, exclusive of references and CVs. The quality of ER proposals should be similar to that of proposals submitted to competitions for funding by agencies such as the National Science Foundation or DOE Office of Science. Written proposals should contain a description of the project's scientific motivation and significance, scope, approach, expected results and relevance to the directorate's strategic goals, Laboratory missions and the Science and Technology Long-Range Plan.

LDRD directorate contacts:

Chemistry, Materials and Life Sciences	Glenn Fox	2-0455
Computation	David Brown	4-3557
Defense and Nuclear Technologies	Denise Hinkel	3-2626
Energy and Environment Directorate	Norm Burkhard	2-6483
Engineering	Greg Suski	3-8070
National Ignition Facility Programs	Chris Barty	3-8486
Nonproliferation, Homeland and International Security	David Dye	2-5036
Physics and Advanced Technologies	William Craig	3-1471
Safety and Environmental Protection	Jesse Yow	2-3521
University Relations Program	Harry Radousky	2-4478

After directorate approval, investigators should e-mail completed proposal packages to Nancy Campos, and the directorates should deliver printed proposal portfolios to Nancy Campos at L-002.

The LDRD point of contact for each directorate (or University Relations Program) can provide guidance on the process, schedule and strategic R&D needs. Information about submittals, including proposal guidance, is available on the LSTO Website under FY08 Exploratory Research, or by contacting Nancy Campos, 2-9805.

In addition, the invitation to submit proposals for the FY08 LDRD Strategic Initiative (SI) category has been issued. The SI is one of the four categories comprising the LDRD Program and emphasizes innovative, high-payoff R&D activities to develop new directions for existing programs, explore new concepts and extend the Laboratory's science and technology foundations.

The SI competition is open to all Laboratory programmatic, scientific, engineering and technical staff. The deadline for submitting proposals for both currently funded and new SIs to the Laboratory Science & Technology Office (LSTO) is the close of business, Friday, April 27.

The FY08 process for submitting new SI proposals begins with a three-page pre-proposal that provides a summary of the objectives, goals and potential benefits of the proposed work, the project's principal investigator and team and the requested funding. The pre-proposal should be submitted to LSTO through the investigator's directorate office by close of business, Friday, Feb. 23. The pre-proposals will be reviewed to select those that will go forward to the next step in the process.

Full proposals should not exceed 25 pages and should include an abstract, background and significance, detailed discussion of FY07 accomplishments (for continuing projects), research design and methods, and specific proposed goals and milestones for FY08 and beyond. Detailed information about submittals, including proposal guidance and the review process, is available on the LSTO Website under FY08 Strategic Initiatives or through your directorate point of contact.

Lab experts to showcase work at San Francisco AAAS this weekend

Several Lab employees will be in San Francisco this weekend to discuss various subjects from energy to the Reliable Replacement Warhead to atomic-size science.

Energy and Environment Associate Director Jane Long will discuss "Three Blind Men and the Energy Elephant" on Sunday, Feb. 18, during the climate change portion of the annual meeting of the American Association for the Advancement of Science in San Francisco. The session, titled "Energy or Climate Security: Do We Have To Choose," will be held at 1:45 p.m. Sunday at the Renaissance Park Hotel, third floor.

During another AAAS session, "The Future of Nuclear Weapons," Director Emeritus Bruce Tarter will discuss the external review of the Reliable Replacement Warhead (RRW) at 10:30 a.m. Sunday in the San Francisco Hilton, ballroom level.

In another session, "Using Science and Technology as a Preconflict Engagement Tool," organized by LLNL's Richard Knapp and Ron Lehman, will feature speakers discussing the United States need to become more anticipatory and focused on addressing and preventing failing states prior to conflict. Eileen Vergino of the Lab's Center for Global Security Research will discuss "Science and Technology Support for Infrastructure Development." This session will be held at 3:45 p.m. Saturday in the Renaissance Parc Hotel 55, fourth floor.

Physics and Advanced Technologies' Larry Ahle's talk on "Atomic Nuclei and the National Need" will be featured at 9:45 a.m. Saturday in the San Francisco Hilton, ballroom level, during the "Femtoscience: From Nuclei to Nuclear Medicine" session.

LLNL researchers also will be engaged in "Family Science Days," which will be held Saturday and Sunday, 11 a.m.-5 p.m. at the San Francisco Hilton, ballroom level, Yosemite Room.

AAAS is partnering with Bay Area museums, universities and others to host Family Science Days, a free event with hands-on activities and stage shows for children and families. The program features Adam and Jamie from the popular television show Mythbusters (Discovery Channel); Billinda the Robot Dog; how to make robots at home; authors of science books for children; and demonstrations such as how vegetable oil used to make French fries can be transformed into biodiesel fuel.

Scott Reed of LLNL's Human Resources/ Recruiting and Employment Division will present "Delivering a Winning Interview" from 12:30-2 p.m. Saturday at the Hilton San Francisco, fourth floor, Union Square Room 19-20.

LLNL's Rick Sawicki is presenting his Science on Saturday lecture "Waves in Nature: Lasers to Tsunamis and Beyond." There will be four sets of demonstrations and hands-on activities both days. There will be "Fun With Science" demonstrations by the Laboratory, students will be able to put their own DNA in a bottle and take home a necklace, examine light using a spectrometer and hear songs used to teach science in a middle school classroom.

SCIENCE NEWS

Deciphering tissue-specific signatures in human genome

By David Gilbert
Newsline staff writer

Two hundred years ago, Jean-François Champollion and colleagues used the Rosetta Stone to help translate previously undecipherable bits of Egyptian hieroglyphics. Today, a half-dozen years after the release of the first draft of the human genome, deciphering our own code, and its implications for healthy development, remains a challenge.

Incrementally, researchers from the Laboratory, Lawrence Berkeley, the Department of Energy Joint Genome Institute (JGI), and the University of Chicago, are chipping away at this important tome. In results presented in an advance online publication of the journal *Genome Research,* they explain a novel computational approach to translating DNA sequence data into functional signatures corresponding to specific tissues of the body.

"Starting from a single cell to the development of the entire organism, the three billion letter human genetic code carries a wealth of information, however, only about 2 percent of the genome is required to encode the whole spectrum of proteins," said Ivan Ovcharenko, LLNL researcher and senior author on the paper. "So how can we cut through the rest of so-called junk DNA to identify regulatory elements concealed in the vast landscape of the human genome and characterize their function?"

Every cell in every tissue has the same uniform code that dictates and precisely regulates how all the genome's approximately 30,000 genes are tasked to perform the myriad functions of the organism. However, much of this orchestration happens outside the boundaries of genes in what is known as noncoding DNA.

Long known by the misnomer "junk," these regions are home to some of the critical regulatory elements, such as enhancers. Tracking down these enhancers can be a vexing proposition, however.

"These non-functional stretches present one of the major challenge of the post-genome era because enhancers can be found all over the place—inside the genes they regulate or barricaded before or after the genes they control." What makes it additionally puzzling, Ovcharenko said, is that in some instances enhancers can reside up or downstream of the genes that they regulate by millions of nucleotide bases, or units of DNA.

DAVID GILBERT/JGI

Ivan Ovcharenko, LLNL researcher and senior author on the paper appearing in the journal *Genome Research,* which explains a novel computational approach to translating DNA sequence data into functional signatures corresponding to specific tissues of the body.

"Evolutionary studies based on comparing DNA from different species — humans, mice and other vertebrates — provide us with some clues on how to identify gene regulatory elements, but how to understand the function of gene regulatory elements based purely on their sequence has remained an open question."

So Ovcharenko and his colleagues Len Pennacchio, Gabriela Loots and Marcelo Nobrega, directed the computational resources of the national laboratory system to analyze a massive experimental gene expression, or microarray, dataset generated by the Novartis Institute. By conducting sequence-pattern searches, they were able to decipher the code of cohorts of tissue-specific regulatory elements hidden in the noncoding part of the human genome and to identify specific signatures associated with tissue-specificity.

"We devised a form of genetic encryption for elements regulating the expression of human genes and developed a method to detect these elements *de novo* directly from the genomic sequence," Ovcharenko said.

By merging three separate analysis factors they were able to assess a score, called Enhancer Identification, to determine a level of confidence that a particular signature is implicated in a particular location and gene expression event.

"For the first time, we've shown that it is possible to identify signatures of tissue-specific gene regulatory elements located at large distances away from genes they regulate. This is a first, but very promising step on our way towards deciphering the gene regulatory landscape of the human and other complex genomes."

The team generated functional signatures for almost 80 different human tissues, including heart, liver and brain.

"You can think of these tissue-specific gene regulatory elements as a treasure map for uncovering the link between gene human regulatory networks, signaling pathways and mutations perturbing protein expression, which could lead to disease," Ovcharenko said.

"While work remains to further refine the power of such methodologies, identifying noncoding sequences with high confidence predictions of where they will express in the human body is likely to accelerate various fields forward," said lead author Len Pennacchio. "For instance, the human genetics research community is excited by the prospect of generating genome sequence of individuals in a clinical setting to see what changes might explain a particular condition, such as heart disease.

Currently, most of the efforts are focused on coding sequence, the familiar, well-characterized features. Gene regulatory elements also are likely to harbor mutations that play a role in human disease as the genes themselves, but we've been stymied in our efforts to locate them. This method opens up the dark recesses of the genome and highlights functional aspects in noncoding DNA. This method may ultimately have relevance for mutation screening, helping to parse the more cryptic elements of the human genetic code and reveal their role in disease."

On the cover:

A graphic representation of cutting through "junk" DNA to identify regulatory elements and characterize their function.

Image: Bang Wong, ClearScience LLC

SCIENCE NEWS

Dave Hall: the primary man behind secondary design

By David Schwoegler
Newsline staff writer

A continent away, former Laboratory designer and A-Division Group-Leader Dave Hall quietly succumbed to complications from cancer on Feb. 2, at Dartmouth Hitchcock Medical Center in Hanover, NH. Most who work here today do not even know his name. But to this day, those who design weapon secondaries continue to work in his shadow. (See obit, page 7.)

Hall graduated with a degree in mathematics from Dartmouth College in 1951. He entered the U.S. Navy that same year, serving both there and in the Naval Reserve until 1957. On April 6 of that year, he began his employment at the University of California Radiation Laboratory at Livermore, and nuclear weapon secondary design has never been the same.

Hall immediately began working in A Division. He remained there until November 1973, working on nearly every major weapons secondary design program, as well as on about 40 nuclear tests. He served as lead designer on about half of those tests.

According to the Lab's remaining silverback designers, Hall should be considered the dean of modern secondaries. Nearly every major class of secondary developed at this institution bears his innovation. Besides being a creative designer, Hall was a human archive who could recount every detail of every test that he had ever worked on. Studying Hall's accomplishments, one of the Lab's new-generation designers described him as, "…the guy who did the work to make big dreams become reality."

> *"…the guy who did the work to make big dreams become reality."*
>
> *–A new-generation designer*

When he left the Lab, Hall went to work for Science Applications International Corporation. He started in Pleasanton, where he helped establish that branch office, then moved on to Hanover. But over the years, he continued to confer with colleagues at Livermore.

Peter Moulthrop worked with Hall in the early days, and then went on to become A-Division leader. He described Hall as a "…work hard, play hard…" person. Moulthrop said that Hall worked hard because, at that time, the country was in an arms race. And Hall felt that when you're in any race, you don't want to come in second.

While playing hard, Hall twice won the club golfing champion at Castlewood Country Club in Pleasanton. He also was a great lover of music and a talented pianist. True to his work ethic, he practiced every day, and played regular volunteer concerts at the Hanover medical center, according to Moulthrop.

Perhaps equal to Hall's brilliance as a designer, was his pervasive and benevolent sense of humor. Colleagues, cohorts and co-workers all mention his upbeat demeanor that included the talent to make people laugh or smile with the simple turn of a phrase.

Retired Deputy Director Bill Lokke perhaps said it best: "Dave's legacy runs deeper than a list of stunning technical achievements. His work ethic — his determined, inexhaustible passion to confirm deep insights with old fashioned hard work — set a standard those of us at the Laboratory spent the succeeding decades trying to match. But his fundamental respect and kindness for all around him, communicated with an infectious, gentle humor, was his richest, most personal and everlasting contribution, a gift he shared with all of us."

Secretary of Energy announces eight Lawrence Award winners

Secretary of Energy Samuel Bodman earlier this week named eight winners of the Ernest Orlando Lawrence Award. The Lawrence Award honors scientists and engineers at mid-career for exceptional contributions in research and development that support the Department of Energy and its mission to advance the national, economic and energy security of the United States. The award consists of a gold medal, a citation and an honorarium of $50,000.

"These brilliant scientists and their varied and important research inspire us," Bodman said. "Their work reminds us of the importance of continued investment in science and the need for increased emphasis on basic research and math and science education programs."

The Lawrence Award was established in 1959 to honor the memory of the late Dr. Lawrence who invented the cyclotron (a particle accelerator) and after whom two major Energy Department laboratories at Berkeley and Livermore are named. The Lawrence Awards, given in seven categories, will be presented at a ceremony in Washington D.C.

The winners are: Paul Alivisatos, UC Berkeley and Lawrence Berkeley National Laboratory; Moungi Bawendi, Massachusetts Institute of Technology, jointly, for the materials research category (the winners of this joint award will share the honorarium); Malcolm J. Andrews, Los Alamos National Laboratory, for the national security category; Arup K. Chakraborty, Massachusetts Institute of Technology, for the life sciences category; My Hang V. Huynh, LANL, for the chemistry category; Marc Kamionkowski, California Institute of Technology, for the physics category; John Zachara, Pacific Northwest National Laboratory, for the environmental science and technology category; and, Steven Zinkle, Oak Ridge National Laboratory, for the nuclear technology category.

Additional information on the winners and their work is available on the Web at http://www.sc.doe.gov/lawrence/.

i.want ads

Due to the high quantity of ads and space limitations, these want ads have been abbreviated. For the complete ad listings, refer to the internal Website: http://www-r.llnl.gov/pao/news/ wantads.html or for the latest pdf download and retiree information, see the external Website: http://www.llnl.gov/pao/employee/. Date of ads: Approx. Feb. 6 to Feb. 13. Ads now appear on the Web for seven days.

Automobiles

1955 Chevy Bel Air 4 door hardtop. $23,500 209-968-9236

1987 Honda CRX, 5 speed, New Clutch, Clean inside and out45Mpg. $2,000 209-838-0304

1994 Olds Eighty Eight, runs fine, needs tuneup, $750.00 or BO, $750 925-447-0747

1999 Chevy Blazer. 4WD, fully loaded, excellent condition, 90K miles. $8,000 925-443-6271

1999 Lexus RX 300 Black with Tan leather interior, asking $14,500 OBO call 925-361-8688.

20" Chrome Rims and Tires. Sold only as a set of four. $900 Cash only. 925-487-9891

2000 Newmar Dutch Star motorhome. 65k miles & Very clean. $75,000 209-847-8264

2001 Mazda Miata LS Great condition, original owner, well maintained $9,100 925-828-4098

2001 Mercedes Benz ML320 SUV. Fully loaded. $16,950 price is $3,000+ below kbb. 925-736-0498

2002 BMW 530i - $25,400. Premium and sport package upgrades. Low miles - 47,300. Call (925) 484-4785.

2002 Ford Thunderbird. Collectors edition, less than 1,500 original miles. $28,500 925-447-5633

2004 Pontiac GTO. This car is in great condition, less than 7500 miles. $19,800 925-447-5633

2004 Toyota Sienna XLE minivan. Only 34,850 miles, $21,750 209-835-9240

2005 MINI COOPER, 18K mi, Blue with white stripes/roof, Black guts, Sport Pkg, 6 Spd, $27,000 925-454-1608

89 Honda Prelude SI 139K miles, Excellent condition. $2,000 925-449-5448

95 E-150 Custom Van. 351 engine, tow package, leather seats, AT, PS, PB, PW, PL, AC 209-401-7770

Dodge Intrepid 99, Good condition, Runs well,180,000 miles Call to see. 209-599-0934

2000 Jeep Grand Cherokee Limited. I'm selling below Blue Book because I already bought my next new Jeep! 925-200-0429

mud/snow tires. Tires: mud/snow both. size 13" $18 925-735-6002

Truck Bed. Tail gate, 2004 Ford minor scratches, white with sprayed liner. $300 925-455-4849

truck shell. White truck shell for chevy silverado six foot bed. $300 925-625-2880

Four Jeep wheels with center caps and four Mud King Steel Radial M&S tires. $350 925-846-0645

Boats

1968 Starcraft v-hull, 16ft,Mercruiser 120 I/O, $800 O.B.O.Boat needs some work. 925-784-2866

1995 Sanger DLX. This boat is always garaged and covered. It is in almost perfect condition. Bimini top, 10ft. 925-454-8855

Triangular Tube for boating. Outlaw Sportstuff 52" triangular tube. Paid $60 plus tax. New in unopened box. 925-648-0671

Electronic Equipment

Nice 19" Dell monitor. $20 925-931-1876

43" Sony rear projection TV and stand. Good condition, could use a tune up. 925-479-0787

Barbie "Jam With Me" pink electronic guitar. $25 925-648-0671

Bass head for sale. Behringer BX3000T bass head with X-Audio 4 x 10" cab for sale. Asking $200; 925-447-3092

Cameras. Olympus 105R, used 1 week. Pentax K1000, 52mm lens, 2x teleconverter & 75-205 zoom. 925-447-7082

Computer. Compaq Presario 1.62GHZ AMD Athlon processor,256 MB RAM, 17" crt flat screen monitor, $100 925-371-5599

Dell Axim - X5 Pocket PC comes with keyboard, docking cradle and extra battery. - asking $400 or best offer. 209-879-3123

Electronic Equipment. HP 952C Printer and HP 4300 Scanner, Both for $75.00. 925-447-6819

Ham Radio Vintage Station. Hallicrafters HT-37 HF Transmitter and SX-101 MKII HF Receiver. $350 209-836-0116

iPod Mini. iPod Mini is 4GB with a song capacity of 1,000. (925) 216-3980

IPOD MINI (4GB) and IPOD (10GB). IPOD MINI - $100. IPOD - $125 650-714-1612

Monitor 17" -never used. Never used monitor in box with speakers. 925-784-3731

Olympus OM 35mm access. 21mm f2.0 $300; very rare lens, no hood/case; 50mm f1.4 $75 no hood/case. 100mm f2.0 $100 very sharp, no case, brassed wear. 300mm f4.5 $200 Case incl. T32 flash $50 Cable & filter set incl. Focusing screen 2-13 $20. All for $650. 510-653-1017

Printer/Copier/Scanner. HP F380 3-in-1 Printer. Brand NEW. Never used. $40 415-519-6186

Digital Sony Cyber Shot Camera 5.1 mega pixals. About 2 years old perfect condition. 925-600-0604

Speakers.Cambridge sound works speaker system. 925-735-6002

TV dish, 2 pickups. $20 925-735-6002

Giveaway

2 pair of skiis. Elan 167cm, Fisher 157cm. 415-519-6186

Four free mirrored closet doors. Four mirrored closet doors with gold anodized tracks. Doors are 30 1/2"w x 78"h. Tracks are 9'10 1/4" long. 925-600-1817

Netherland dwarf rabbit, about 7 years old, black and white, with plastic cage and supplies. Call 925-606-6155

2 Horse paddocks 12x16 metal pole. Need to be dissassebled. You haul. 925-831-1833

Moving Supplies. Recent hire looking for a good home for boxes and clean wrapping paper from our move from New York. 925-245-1705

YOUNG CATS - FREE TO GOOD HOME. Healthy, neutered, indoor cats. 650-714-1612

Household

2 each– Black iron 2-plate holder (country cottage) mounts on the wall. 925-354-3196

Amana Large Load Electric Dryer. 4 yrs. old, in excel. condition. In Livermore,call after 5 p.m. $100 925-454-1622

Bookshelves Ladder Style. $80 - Both are solid wood with a cherry stain 925-640-5469

Eur Sleep Works Cal-King Oak Platform Bed with two built-in night stands and six built-in drawers underneath. $100 (925) 785-3526

Complete children's bedroom sets. Includes twin bed, 5 drawer dresser, desk and nightstand. One honey pine and one walnut pine. 925-361-4491

Childrens bedroom set. Junior Girls Corner loft bed; white washed Pine with heart design. $525 OBO. 925-447-4797

Cherry wood china hutch for sale. Glass door, two accent lights, glass shelves, mirrored back. make an offer or $250. 925-964-0534

Cambridge Country China Hutch Asking $900. 925-447-5904

Coffee Table. Maple color. Formica top. Bottom shelf. $25 925-447-7082

Comforter TWIN w/Bedskirt and Sham. $25 925-640-5469

Dinette table and 4 chairs. 48 x 36 plus leaf. Laminate wood-grain surface. Fabric chairs, $100 OBO. 925-846-3653

8-piece Dining set - Pine cottage style, probably 1920's or 1930's. Table, 6 chairs, matching buffet. $500. 925-462-2197.

Dining Set, Parquet, Solid wood, 6 chairs (with off white cushions. Originally paid $1600. $600 (925) 249-1786

Serta double mattress/box spring; practically new. $150. 925 245-0915

Drapes (2 sets). Natural color, nubby texture, pleated, machine washable, great condition. 925-443-8442

rattan table and chairs, Asian rosewood coffee table, Asian rosewood end tables, $400 510-444-5268

Refrigerator with ice maker. $150. Dining room table with one leaf. $50. Entertainment Center for 27 inch TV. $150. Futon couch/double bed size. $50. Oak corner shelf. 3 ft. high. $20. 925-447-7768

GE Refrigerator 25";Side by side, water and ice in door, almond. $100 925-455-4849

Girls Twin Sleigh Bed and Mattress set. whitewash finish, excellent cond. $250 925-443-5008

Kenmore Elite Dishwasher. $200 925-784-3731

Lawn Mower. Push lawn mower in excellent condition; Briggs & Stratton Poulan, 20", rear bushel bag, 4.0 hp engine,. $50 925-245-9001

Lenox Charleston Platinum Banded Ivory China 20-Piece Dinnerware Set, Service for four;$100 925-980-8443

Like new white Office Fridge with freezer compartment. $40 obo. 925-240-7374

Microwave w/turntable. Sharp table top microwave $25 925 735 6002

mohair blankets. 100 percent mohair blankets (washable) from South Africa. 925 447 8415

Queen Comforter Set (Like New) $50 925-354-3196

Queen Size Bed. Like new. 925-455-4849

Quilting Machine. Sewing Machine, Bernina Quilters Addition, Asking $750 925-447-6819

4' Rattan table with leaf and 4 upholstered swivel chairs, very good condition. 925 447 8415

Glass top, wood(dark-ish) and metal legged semi-circle sofa table and matching round end table. Ashley Axiom model. Asking $100 for sofa table and $50 for end table. 925.784.6682

Strait Line Rolling Measuring Tape - New in unopened box. $20 925-648-0671

sofa, Basset sleeper; Christmas China for 16 w/accessories; Pfalatzgraff dinnerware for 8; 1 round teak table; misc. holiday decor; 1 ToTo toilet stool; power mower; all good condition/bargain prices. 925-443-4909

White Sleigh Changing Table - almost 2 years old; excellent condition. $75 obo 925-922-0772

Wine Refrigerator. Converted mechanical thermostat model refrigerator maintains ideal temperature (52-58 F, adjustable). $40 (925) 423-0625

Lost and Found

Diamond Bracelet. I lost a diamond bracelet on Wednesday Feb 7th/. 925-423-1827 or 925-803-9596.

Pictures Found - hanging filer folder full of pictures and articles. Call 2-3860 if it's yours.

I am lost - Black Glove. I am a BEC-TECH Black Fleece Glove Pick me up in Bldg 671 Rm 1032 to reunite me with my better half 925 449-2620

Lost Lab Book. Lost- Brown hardbound lab book. Has numbers for LLE and SP in front. Call 337-5284

Miscellaneous

Air gun nails,3",10d, 3,000 in box $25. 925 735 6002

Batman Slip N Slide by Whamo. New in box. Paid $20 plus tax. 925-648-0671

COACH purses. black and brown leather demi pouch in excellent condition. $60 each or $100 for both. 650-714-1612

Wheel Barrow,6 cub.ft., (contractor size). $40 925-735-6002

Drill Tool Kit. Durabuilt 19.2V rechargeable drill tool kit with tool storage box. Paid $100 plus tax. New in box. $60 925-648-0671

Hot Tub: Dimension I, fully operational. Seats 4 - 6, 120/240 volt, includes cover, tile surround. $700 obo, (925) 833-6076

Gray Thick Slate Pavers. 50-60 very thick gray stones for pavers. Paid $1200. $875 obo 925-337-6360

Honda generator 2800w new 2005,never used. Cost: $550. sell: $400. 209/533-1127

Jewelry Organizer Trays. I have 5 of these: two in blue - two in rose - one in burgundy. Originally $95. $36 925-640-5469

Men's stamped "14K" Yellow Gold Diamond Ring. 510-792-1538

mens ski boots, racquets, deli slicer, gas log insert 24" dining room light. 925-550-3267

Neon Lights - Spuds Mckenzie and Louie the Lizard. These lights are collectible neon signs from the 80's and 90's. Make offer 422-3180

Quilt cut fabric cutting system. Alto's quilt cut fabric cutting system. Paid $160, $75 925-447-3432

Radial Arm Saw, Craftsman 10 inch. 450 925-447-6819

SPA. Brand new 2005 United Spa never been used and still in original wrapping. Spa sits at least seven people. $5,500 209-481-9022

Storage Pedestal. Two-drawer metal and glass rolling drawers with seat cushion top. $35 925-640-5469

truck shell. White truck shell for chevy silverado six foot bed. $300 obo 925-625-2880

Twin Bed with Brass Headboard. Simmons mattress and box spring (Phoenix model), brass headboard, and frame. Paid $978, asking $300 OBO. 925-846-3653

TWIN Comforter w/Bedskirt, Shams & Panel Curtains--$47 Originally over $90 - 925-640-5469

Victrola Phonograph. Model VV-215 Console Unit with record storage. $300 209-836-0116

Walker. like-new condition push-down brake and basket; blue Nova Ortho-Med Cruiser; $80. 925-462-2197.

Motorcycles

1984 Harley XR1000. Very good original condition w/9100 miles. $15,000 209-836-4361

2002 Honda XR400. Low miles. $3,500 209-833-6202

2002 Suzuki 1200S Bandit, $4000 OBO Original owner, excellent condition, well maintained, never dropped, runs perfect. 925-606-6515

2006 Harley-Davidson Ultra Classic FLHTCUSE $30,000 209-823-3848

Class 3 receiver hitch motorcycle carrier. $450 209 835 3782

HD Motorcylce. 2000 883C Sportster, 10,800 miles, $5,400 925-699-1964

Leather Motorcycle Jacket. UNIK brand Leather motorcycle Size 54. 925-455-8006

Music Instruments

Antique Piano. 1903 Chickering studio upright piano. $2,500 or b/o 925-437-8235

Fender Vibro King. Has original tubes, with low mileage. $1,500 209-836-4361.

Piano - Baby Grand. For sale - antique baby grand piano. 1906. Have appraisal. $1,000 373-7579

Pets

5 yr. AQHA reining gelding. This 5yr. gelding is a quiet sweet gelding. $5,000 209-968-2278

Adopt a Bunny. Rabbit adoption event Dublin on Feb. 24 from 1-4 p.m. 925-447-2130

Declawed black male cat for adoption. Estimated date of birth 8/03. 925-980-3035

Dog Kennel. PetMate deluxe carrier, mediam size (27"x21x20"). $25 925-443-7422

Dog kennel panels. Twelve, 6 foot by 6 foot dog kennel panels. $300 obo 209-833-6444

large parrot cage. Expandable Habitats brand parrot cage cost new $1000 sell $125 offer. 510-444-5268

Lovable Cardigan Corgi Mix. Free to good home - 5 year old spayed female Cardigan Corgi Mix. 925-525-6800

One Palamino and one black dwarf rabbit, both two years old and female. 447-4370

Tiki Bay Yorkies for sale. Pups are AKC registered, $800 each 209-324-5325

Recreation Equipment

5ft Olympic bar. Pro quality,heavy duty,5ft olympic training bar,includes collars. $45 925-381-7961

Airwalk snowboard boots size 8. Excellent condition. Used three times. $40. 925-600-1817

Dartboard, Halex electronic, Gamma III. 28 games with 167 level variations. $35 925-648-0671

Health Rider Exercise Unit. Perfect working condition. $50 OBO. 925-989-1159

Kemper Snowboard with Bindings. $50. 925-455-4484

mens roller blades size 11 gloves & bag $30. 550 3267

NORTHSTAR LIFT TICKET-PASSES. 8 EACH NORTHSTAR LIFT TICKET-PASSES. ASKING $50.00 EACH. 925-376-0316

Olympic style weight set and an adjustable bench. Includes a 40 lb bar with 255 lbs of $100 (925) 447-7907

Ski equipment/ Two pair of skis with boots: Olin 195cm skis with Raichle men's size 9-9.5 boots and poles, Elan 170 cm skis Nordica women's size 7 boots, no poles. FREE! 925 449 8783

Downhill skis + poles + boots. Great for beginner. Vital S20 skis with Marker M28 bindings, size 180cm. Nordica Next-87 boots, size 27, All for $200 obo. 925-200-2543

Weight Set and Bench. Joe Weider weight set, several bar's and 500lbs of weights. Asking $100 for all, or best offer. 925-447-5904

Weights/Barbell/Dumbbells - $235 OBO 925-640-5469

Ridesharing

9/80 Carpool to/from Ripon. Leave Ripon at 6:15am - Leave Lab at 5pm. Lab Phone 3-9020 209-599-0922

El Cerrito - Berkeley Vanpool. Our vanpool has openings for full time or casual riders. M-F 7:45 am to 4:30 pm work schedule. Call x3-7995 510-524-5769

Modesto vanpool has 2 full time openings. Regular hours from 8:00 to 4:45. Leave Home Depot at 6:35 am,leave Lab at 4:45. 209-576-0217

Looking to join a carpool or vanpool. Sunnyvale Area - Working hours are 7:30 a.m. - 5 p.m., but are flexible. 408-738-1154

Modesto Vanpool. Regular space available. 8 - 4:30 work schedule. Luxury van with captain chairs and reading lights. 209-521-9047

Montclair/Oakland Vanpool. Vanpool leaves Montclair at 7 a.m. to arrive at LLNL at 8:45 work time. Departs at 5:30 p.m. Friday departs at 4:30 p.m. (AWS) Call 4-6215 925-424-6215

Patterson Vanpool Opening. Pick up location is at Jack in the Box in Patterson 5 days a week. Work hours are 7:00 - 4:30 M - Th, 7:00 - 3:30 F. $160/month. 209-895-4447

Vanpool. Modesto/Ripon to LLNL. 8:00 - 4:30 shift, M-F. 14 passenger van. Multiple spots available. X2-2727 (209) 544-6411

Shared Housing

Livermore room for rent. Nice neighborhood. No pets. Home has two bathrooms. $600/mo 925-454-9329

Room for Rent. Furnished bedroom w/ private bath $600/month 925-443-6160

Room for rent in Livermore: $530.00/ month including utilitites, fully furnished. 925-443-8448

Room for rent in Tracy - unfurnished. $450.00 + small deposit. 1/3 utilities -full privileges. (209) 835-8249

Small furnished room near LLNL. $450/mo + share utilities + deposit. No smoking, pets, or stereo. Male preferred. 925-455-6044

Room for rent in Livermore this summer-fully furnished, includes all utilities (except phone), $650/mo 925-321-1400

Trailers

Trail Lite R-Vision Camping Trailer. 28 ft Excellent Condition - BARELY USED!!! 209-835-8266

1999 COACHMAN 5th WHEEL TRAILER, 24 FT. with 1 Slide-out, Microwave, Gas Oven/Stove, $9,000 obo 925-447-7878

2006 Forest River Cherokee 5th wheel, 31.5 feet, two slides. Two full bedrooms, Asking 24K OBO 209-321-1506

31 ft. Weekend Warrior Toy Hauler. Fully self contained ready to go. $18,000 obo (209) 832-8963

Trucks

1964 Dodge Power Wagon 4x4, NP541 5-speed, 440 cu in engine. $2,500 925-960-9221

1972 C-10 stepside pickup. Truck is very straight and runs great. $6500 obo 925-373-3429

2006 Ford 4.0 Liter XLT Supercab 2D Ranger 4WD. $18,800 209-535-3809

89 GMC K1500. Great truck for kids. 4.3L V6 5 speed still gets 18 mpg. $3,500 209-823-0246

Toyota pickup. 2003 Toyota Pickup truck 80,000 miles. 925 337 2810

Vacation Rentals

Large Vacation Home in Kona Hawaii 415-377-4361

Maui, HI. Kahana Reef oceanfront 1BR/ 1BA condominium. 925-449-0761

Pinecrest cabin, near Dodge Ridge skiing, $225/wknd. 925-449-5513

SOUTH LAKE TAHOE CHALET. 3 Bedroom 2 bath Chalet, 209-599-4644

Truckee Mountain Home. 3 BR-2 BATH, fully furnished Truckee home in forest setting, Close to town and Northstar 925-784-0245

Week at Timeshare in Mexico. Available for 7 days in May or June. 925-484-3889

Wanted

Looking for seasoned, ready-to-burn-now firewood. 925-513-4767

Wanted: Free Pavers for backyard project. Useable condition only. 925-964-0534

IN MEMORIAM PEOPLE NEWS

John DeGroot

John De Groot, UC Davis professor emeritus of applied science, died Jan. 16. He was 72.

Born in 1934, De Groot received his bachelor's degree in physics in 1959, his master's degree in 1964 and his doctorate in 1967, all from UCLA. He taught briefly at UCLA before joining UC Davis as an assistant professor in the Department of Applied Science in 1969.

He formally retired in 1994, but was recalled in 1999, serving as vice chair of the Department of Applied Science from 1999 to 2001. During this time, De Groot worked to establish the undergraduate program in optics, which began accepting students in 2000, and the major in computational engineering science, which opened in 2002.

After returning to emeritus status in 2002, De Groot continued part-time research aimed at harnessing the vast power of thermonuclear fusion, the process that powers the sun and other stars, for power generation. He carried out research at the Laboratory and the Sandia National Laboratory in Albuquerque, and collaborated with other fusion researchers in the United States and around the world.

De Groot's wife, Nancy, died in 2006. De Groot is survived by his daughter, Rachael Gavoni, and her husband, James Gavoni, of Sacramento; his son, Anthony De Groot, and Anthony's wife, Wendy De Groot, of Castro Valley, two grandchildren, Stephanie De Groot and Michael De Groot; and his sister, Joan Weltmann of Bend, Ore.

A UC Davis campus memorial service is planned for later in the spring.

Elmer LeRoy Goodeill Sr.

Elmer LeRoy Goodeill Sr. died Nov. 28, 2006 in Hayward. He was 77.

Goodeill worked at the Lab for 25 years as a custodian. Prior to that, he worked as a roofer and a shoe repairman. He enjoyed working with wood, visiting neighbors and friends and listening to country music. He attended the First Christian Church in Castro Valley.

Goodeill is survived by his wife of 60 years, Ruth; sons Larry Goodeill of Westminster, Calif., Mark Goodeill of Boring, Ore. and Elmer Goodeill, Jr. of Centralia, Wash.; daughter Loretta Mason of Talent, Ore.; former foster son Mike Fleming of Pleasanton; friend, Carla Fleming of Union City; 14 grandchildren and 10 great-grandchildren.

Services were held in Hayward.

Janet Guthreau

Janet (Masters) Guthreau, who worked at the Lab for 18 years, died Feb. 4 in Medford, Ore.

Guthreau was a program administrator for the Lab's Security Awareness for Employees (SAFE) program from 1990 until her retirement in 2004. She worked with SAFE program managers Bob Marrero, Bill Cleveland and Terry Turchie.

Before working with the SAFE program, Guthreau held executive secretary and administrative support positions for computer firms in the Silicon Valley and in the Laboratory's Security Department and Construction Contracts and Small Systems Support organizations. She was employed as a contractor before becoming a Laboratory employee in July 1989.

She resided in Discovery Bay, Brentwood and, for a short time, Bethel Island before moving to Grants Pass, Ore., following her retirement.

Donations may be made in Guthreau's name to the Susan G. Komen Breast Cancer Foundation at http://www.komen.org or 888-888-3317.

Dave Hall

A former Laboratory designer and A-Division Group-Leader, David K. Hall died Feb. 2 at Dartmouth Hitchcock Medical Center in Hanover, NH, of complications from cancer. He was 77.

A graduate from Dartmouth College in 1951, Hall joined Livermore in 1957, after service in the U.S. Navy.

He worked on nearly every major secondary design program, as well as on about 40 nuclear tests, serving as lead designer on about half of those tests. (See story, page 5.)

Hall remained at the Lab until1973, when he left to work for Science Applications International Corporation in Pleasanton.

Born November 25, 1929 in Bromley, UK, Hall is survived by his wife Barbara Jean Farr Hall and daughter Jenny Lynn. The couple had been married since 1960, and had two children.

Memorial services were held Feb. 9, in New Hampshire. In lieu of flowers, the family requests donations in memory of David Hall to Dartmouth Hitchcock Medical Center Development Office, 1 Medical Center Dr., Lebanon, NH 03756; or to Grace Cathedral Bay View Mission, c/o Rev. Nina Pickerrell, 1100 California St., San Francisco, CA 94108.

Hiram Allen Phillips

Hiram Allen Phillips a 35-year Lab employee, died Jan. 23. He was 76.

Born in Spiro, Okla., on April 9, 1930, Phillips moved with his family to California in 1939, where they settled in Visalia. He graduated from Visalia High School in 1948 and served in the U.S. Marine Corps from 1948 to 1950. He then moved to Livermore in 1951, where he lived until 1978 when he moved to Tracy.

Phillips was a supply and distribution manager at the Lab until his retirement in 1988. After his retirement, Phillips and his wife traveled, spending winters in Arizona and summers on the Oregon coast and enjoyed trips in their RV throughout North America. Phillips was a member of the Tracy Elks Lodge BPOE, a partner of Norm's Towing in Livermore since 1981, and a member of the Golden Anchor Boat Club in Tracy where he served as the commander for three years.

He is survived by his wife of 38 years, Karen Phillips; children, Janie Corum, and her husband, Ralph; Steve Bretz, and his wife, Joanne; Stephanie Harrah, and her husband, Tim; Donivan Bretz-Seymour; Norm Phillips, and his wife, Robyn; 11 grandchildren; eight great-grandchildren, and one great-grandchild on the way.

Services were held in Livermore. Donations in Phillips' name may be sent to the American Heart Association, 11200 Golf Links Road, Oakland, CA 94607.

William Joseph Prokosch Jr.

William Joseph Prokosch, a Lab retiree and resident of Livermore for 40 years, died Feb. 9. He was 78.

Born March 29, 1928, in Albuquerque, he served four years in the Navy as a seaman. He lived in Albuquerque 39 years before moving to Livermore in 1967.

Prokosch worked as an electroplater in the Material Fabrication Division of the Mechanical Engineering Department for 21 years before retiring in 1988.

He enjoyed camping, traveling and spending time with family, as well as baseball, bowling, fishing, model airplane building and making wood crafts. He was a member of Holy Cross Lutheran Church in Livermore. He was involved in the American Legion, Eagles, Sons in Retirement and the American Bowling Congress.

He was preceded in death by his wife of 48 years, Joan L. Prokosch.

He is survived by his sons David Prokosch and Michael Prokosch, both of Livermore; daughters Bonnie Hahn and Nancy Danielsen both of Livermore, and Sherry Marsh of Fremont; 13 grandchildren and one great-grandchild.

A funeral service will be held at 3 p.m. today, Friday, Feb. 16, at Holy Cross Lutheran Church, 1020 Mocho St., Livermore. Burial will follow at Memory Gardens, 3873 East Ave., Livermore. After the burial, family and friends are invited to gather at Holy Cross Lutheran Church for a reception.

Memorial gifts may be sent to the William Prokosch Memorial Fund, Holy Cross Lutheran Church, 1020 Mocho St., Livermore 94551.

NEWSLINE

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SCIENCE NEWS

Tomas Diaz de la Rubia to serve as editor of new scientific journal

By Anne M. Stark
Newsline staff writer

Tomas Diaz de la Rubia

This year, Tomas Diaz de la Rubia will be doing a little more than his regular day job as associate director of the Chemistry, Materials and Life Sciences Directorate.

If overseeing a directorate isn't enough, try being the editor in chief of a new scientific journal as well.

But that's exactly what Diaz de la Rubia will be doing. Late last year, he was tapped to be a co-editor in chief of the new Springer journal *Scientific Modeling and Simulation*. His co-editor in chief is Harvard professor Efthimios Kaxiras who works in the Lyman Laboratory.

Though the first issue of the journal won't be published until the fall, Diaz de la Rubia and Kaxiras already have their work cut out for them.

The scope is focused on cross-disciplinary science at the boundaries of chemistry, physics, biology and computing. Diaz de la Rubia said advances in theory and algorithms with growing computational power and sophisticated experimental methods will open up new vistas into the nature and evolution of physical and biological systems.

The journal will be focused on scientific modeling and simulation applied to areas such as:

- Alternative, nuclear, fusion and bio-derived energy fuels and systems.
- Environmental science including climate modeling.
- Biological function including modeling at the molecular and cellular levels and multiscale modeling of biological systems.
- Biomimetics, self assembly and complexity at the organic-inorganic interface.
- Nanoscale and nonlinear materials and complex system including their design and the prediction of emergent properties.
- National security applications of high-performance computing for biodefense and nuclear nonproliferation.

"This new journal will interface well with the aims and goals of the Laboratory," Diaz de la Rubia said.

Though he won't be part of the peer-review process, he said it's a good opportunity for Lab researchers to highlight their work.

"My hope is that we can stimulate people to write high-quality articles," he said.

In addition to the new journal, Diaz de la Rubia also serves as an editor of the American Institute of Physics *Applied Physics Reviews* and sits on the editorial board of *Nanotech Briefs*.

But where does he find time to do this and serve as CMLS associate director?

"Evenings and weekends," he said. "I wasn't looking for more work but this is something good. I want to give back to the scientific community."

DDLS speaker to focus on end of the oil age

David Goodstein, vice provost and professor of physics at the California Institute of Technology, will present "Out of Gas: The End of the Age of Oil" at 3:30 p.m. Tuesday, Feb. 20, in the Bldg. 123 auditorium as part of the Director's Distinguished Lecturer Series.

Has the world reached, or even passed, Hubbert's Peak, the point at which half of all oil known to exist has been consumed? Either way, the world will soon start to run out of cheap, easily produced oil. However, turning to other fossil fuels to replace oil might do incalculable damage to our planet's climate. In the best-case scenario, methane-based fuel could bridge the gap until we ramp up nuclear and solar power sources to meet our long-term needs — but even then, we are likely to start running out of all fossil fuels by the end of this century.

Goodstein received his Ph.D. in physics from the University of Washington. His book "States of Matter," published in 1975, was hailed as the book that launched the discipline of condensed-matter physics.

The presentation will be rebroadcast on LabTV Ch. 2 at 10 a.m., noon, 2, 4 and 8 p.m. Thursday, March 1, and at 4 a.m. Friday, March 2.

For more information on Goodstein, go to the Web at http://www.its.caltech.edu/~dg/.

Science on Saturday 2007

The Lab's popular lecture series 'Science on Saturday' is back for another exciting season and runs from March 3 through March 31. Kicking off the Tri-Valley series on March 3 is "The National Ignition Facility: Making Star Power on Earth," presented by Ed Moses, Richard Sawicki, Chris Ebbers of LLNL and Dan Burns, a teacher at Los Gatos High School.

Imagine a sphere much smaller than a pea releasing enough energy to supply all of the electricity needs of the United States for a brief moment in time. How could this be possible? At LLNL's National Ignition Facility (NIF), scientists and engineers are nearly ready to make this a reality.

NIF will compress and transform electrical energy into 192 extraordinarily powerful laser beams capable of safely igniting a small star in its experimental facility. This lecture will show how this will be accomplished and how energy can be compressed to extreme power levels potentially providing a future of clean energy for our world.

The first 500 students attending this presentation will receive a special 'Science on Saturday' teaching tool.

March 3 - The National Ignition Facility: Making Star Power on Earth
Learn how NIF will compress and transform electrical energy into 192 extraordinarily powerful laser beams capable of safely igniting a small star in its experimental facility.

March 10 - Comets and the Stardust mission: What's in Our Solar System's Freezer?
Discover how comets were formed, their role in the Earth's history and the clues we are finding about what happened over 4 billion years ago.

March 17 - Carbon Dating: Its Modern Applications in Biomedicine
Find out more about carbon dating and the techniques used at the Lab's Center for Accelerator Mass Spectrometry (CAMS) to address biomedical research questions.

March 24 - Energy Crisis: Will Technology Save Us?
Will we run out of certain forms of energy, such as oil, and when we do, what are the replacement options? How does hydrogen, not a fuel itself, fit into the future U.S. energy picture? Learn more about some possible solutions to energy problems.

March 31 - Driving a Rocket Fueled Car: 500 Miles at 400 Degrees Below Zero
See the techniques demonstrated in a prototype hydrogen fuel tank onboard a hydrogen-fueled Toyota Prius that can be driven 500 miles without refueling.All lectures are held at the Amador Theater, 1155 Santa Rita Road, Pleasanton. Two presentations will be offered each Saturday at 9:30 a.m. and 11:15 a.m. Seating is on a first-come, first-served basis and pre-registration is not required. Admission is free of charge.

Details about the program, a map to the theater, and a flier of the schedule is available online at http://education.llnl.gov/sos/.

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